

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No. : 09/824,570 Confirmation No. : 8702  
First Named Inventor : Christof EBERSPAECHER  
Filed : April 3, 2001  
TC/A.U. : 1775  
Examiner : JASON L. SAVAGE  
Docket No. : 225/49834  
Customer No. : 23911  
  
Title : Synchronizer Ring

REPLY BRIEF

Mail Stop Appeal Brief - Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

This Reply Brief is filed pursuant to the requirement set forth in 37 C.F.R.  
§ 41.39(b)(2) and addresses the new ground of rejection appearing on pages 5-6 of  
the Examiner's Answer dated March 19, 2007.

*Status of claims*

Claims 1, 2, 4, 16, and 56-59 remain present in the application, remain rejected, and are appealed. Claims 3, 5-15, and 17-55 are canceled.

*Grounds of rejection to be reviewed on appeal*

Two grounds of rejection are now presented for review in this appeal.

1. Whether claims 1, 2, 4, 16, and 56-59 are unpatentable under 35 U.S.C. § 103(a) over U.S. Patent 5,249,661 to Kawamura et al.
2. Whether claims 1 and 56 are anticipated under 35 U.S.C. § 102(b) by U.S. Patent 5,249,661 to Kawamura et al.

*Argument*

*1. Rejection of claims 1, 2, 4, 16, and 56-59 under 35 U.S.C. § 103(a) over U.S. Patent 5,249,661 to Kawamura et al.*

The rejection of independent claim 1 under 35 U.S.C. § 103(a) based on the Kawamura et al. patent is erroneous and should be reversed. The Kawamura et al. patent does not disclose or suggest a synchronizer ring comprising a tribological coating which is permitted to be over 30% and up to 40% by weight of a solid lubricant as claim 1 requires (emphasis added). The film 3 of the Kawamura et al. synchronizer ring, instead, has ceramic particles of 5 to 30% by weight disposed in molybdenum or a molybdenum alloy. Lines 30-35 in column 4 of the Kawamura et al. patent set forth that when the ceramic particles are present in an amount over 30 weight %, abrasion of the object member may overexceed. Evaluating the disclosure provided by the Kawamura et al. patent for what it fairly teaches one of ordinary skill in the art necessarily leads to a conclusion that a synchronizer ring comprising a tribological coating which is permitted to be up to 40% by weight of a solid lubricant is not to be provided, since such a coating would provide abrasion which may overexceed. In view of the discussion provided by lines 30-35 in column 4 of the Kawamura et al. patent, modifying the Kawamura et al. film 3 so that it is permitted to be over 30% and up to 40% by weight of a solid lubricant as claim 1 requires certainly is not made obvious by the Kawamura et al. patent disclosure itself. Such a modification is also not suggested by anything else properly relied on by the Examiner.

In lines 1-3 of the first full paragraph on page 3 of the Office Action dated December 30, 2004, the Examiner refers to lines 51-60 in column 4 of the Kawamura et al. patent, and contends that this portion of the Kawamura et al. patent “teaches that the loading may be 30 wt%.” As acknowledged by the Examiner on page 7 of the Examiner’s Answer, these lines discuss surface porosity percentage rather than weight percentage. Lines 14-25 in column 4 of the Kawamura et al. patent, which are now referred to and relied on by the Examiner on page 7 of the Examiner’s Answer, suggest nothing more than including uniformly dispersed ceramic particles in an amount of 5-30% by weight in the flame-coated film 3. This portion of the Kawamura et al. patent does not in fact suggest provision of a synchronizer ring tribological coating which is permitted to be up to 40% by weight of a solid lubricant in view of the discussion provided by lines 30-35 in column 4 of the Kawamura et al. patent.

The Examiner states in the first full paragraph on page 6 of the Office Action dated December 30, 2004, moreover, that “even though the art discloses that having lubricants in an amount greater than 30 wt% could result in unwanted abrasion of the object member, it is still considered a teaching of solid lubricant loadings of over 30 wt%,” apparently concluding, therefore, that lines 13-15 and 30-35 in column 4 of the Kawamura et al. patent disclose the “over 30% and up to 40% by weight of a solid lubricant” range specified by claim 1. As noted, however, under U.S. law, where there is a range disclosed in the prior art, and the claimed invention falls within that range, any presumption that the claimed invention is obvious will be rebutted if it can be shown that the prior art taught away from the claimed invention. *Iron Grip Barbell Co. v. USA Sports*

*Inc.* 392 F.3d 1317, 1322, 73 USPQ2d 1225, 1228 (Fed. Cir. 2004). The clear teaching provided by lines 30-35 in column 4 of the Kawamura et al. patent, namely that abrasion of the object member may overexceed when ceramic particles are present in an amount over 30 weight %, serves to rebut any possible presumption that the “over 30% and up to 40% by weight” range specified by claim 1 of the present application is obvious in view of the Kawamura et al. patent.

Claim 1 also defines the solid lubricant as having a particle size of no more than approximately 180  $\mu\text{m}$ . While it is acknowledged that the discussion set forth from line 60 in column 5 to line 2 in column 6 of the Kawamura et al. patent describes formation of a flame-coated film by effecting a coating treatment with material powders consisting of 150 mesh structure molybdenum alloy to which 250 mesh ceramic particles were added, nothing in this or any other portion of the Kawamura et al. patent suggests provision of a solid lubricant having a particle size of no more than approximately 180 $\mu\text{m}$  as particularly recited in claim 1.

For the reasons discussed above, the rejection of claim 1 under 35 U.S.C. § 103(a) is erroneous and should be reversed. Claims 2, 4, 16, and 56-59 depend on claim 1, and the rejection of these claims under 35 U.S.C. § 103(a) should be reversed as well for the same reasons.

*2. Rejection of claims 1 and 56 under 35 U.S.C. § 102(b) over U.S. Patent 5,249,661 to Kawamura et al.*

The newly presented rejection of independent claim 1 under 35 U.S.C. § 102(b) based on the Kawamura et al. patent is also erroneous and should be reversed. Comparative Example 1 discussed from line 63 in column 6 to line 5 in column 7 of the Kawamura et al. patent is not a synchronizer ring comprising a tribological coating which is permitted to be over 30% and up to 40% by weight of a solid lubricant as claim 1 requires. Table 1 and the portion of the Kawamura et al. patent specification noted provide only that the flame-coated film utilized in Comparative Example 1 has a ceramics addition of 35 weight %. Comparative Example 1 also fails to meet the “no more than approximately 180  $\mu\text{m}$ ” solid lubricant particle size and the “up to approximately 30%” porosity limitations of claim 1.

For the reasons discussed above, the newly presented rejection of claim 1 under 35 U.S.C. § 102(b) is erroneous and should be reversed. Claim 56 depends on claim 1, and the new rejection of this claim under 35 U.S.C. § 102(b) should be reversed as well for the same reasons.

CONCLUSION

Again, no fees should be required to effect proper filing of this Reply Brief. If any additional fees are in fact required, however, the Commissioner is hereby authorized to charge such fees or any deficiency in fees, or to credit any overpayment of fees, to Deposit Account No. 05-1323 (Docket No. 225/49834).

Respectfully submitted,

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